

Notice of Allowability

Application No.

10/643,675

Examiner

Craig A. Thompson

Applicant(s)

GONG ET AL.

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application of 8/15/2003.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ The drawings filed on 15 August 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: prior art of record does not describe or suggest applicants' invention set forth in claims 1-11, a method for fabricating a transistor having a fully silicided gate wherein a substrate is provided with a semi-finished transistor formed there, wherein the semi-finished transistor comprises a gate dielectric, a silicon gate on the dielectric, a gap layer on the gate, a spacer on sidewalls of the gate and source drain regions in the substrate beside the gate, raised source/drain regions are formed, the cap layer is removed, and a full silicidation process is performed to fully silicide the silicon gate. Similarly, prior art of record does not describe or suggest the invention of claims 12-20, a method for fabricating a transistor having a fully silicided gate wherein, a gate dielectric film, a silicon layer and anti-reflection layer are sequentially formed and patterned wherein the silicon layer is patterned into a silicon gate, a source/drain extension is formed, a spacer on sidewalls of the gate structure is formed, a selective epitaxial growth process is performed to form a raised source/drain region, the anti-reflection layer is removed and a full silicidation process is performed to full silicide the silicon gate and simultaneously to form a silicide contact from the raised source/drain, in the context of the recited process.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Cited Prior Art

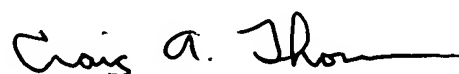
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yu et al. (U.S. Patent No. 6,853,020) teaches a method for forming a double-gate semiconductor device that may be fully silicided (column 1, lines 40-44). One embodiment includes a FinFET with raised source/drain regions (column 6, lines 51-59).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Thompson whose telephone number is (571)272-1699. The examiner can normally be reached on Monday-Friday 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on (571)272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, reading "Craig A. Thompson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Craig A. Thompson
Primary Examiner
Art Unit 2813

22 February 2005